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| Course Detail     |  |  |
|-------------------|--|--|
| Course Title :    | Doctor of Philosophy Program in Smart City Management and<br>Digital Innovation  |  |
| Doctoral Degree : | Doctor of Philosophy (Smart City Management and<br>Digital Innovation) /<br>Ph.D. (Smart City Management and Digital Innovation) |  |

#### Credit Requirement: Plan 1.1

Total Credit not less than 48 credits

#### Structure of the Program

|     |                             | Higher     | Revised    |
|-----|-----------------------------|------------|------------|
| No. |                             | Education  | Curriculum |
|     | Requirements                | Curriculum | 2025       |
|     |                             | Standards  |            |
|     |                             | 2022       |            |
|     |                             | Plan 1.1   | Plan 1.1   |
| 1   | Coursework not less than    | -          | -          |
|     | 1.1 Core Courses            | -          | -          |
|     | 1.2 Electives not less than | -          | -          |
| 2   | Dissertation not less than  | 48         | 48         |
| 3   | Required Non-Credit Courses | -          | 3          |
|     | Total not less than         | 48         | 48         |

#### 1. Plan 1.1

For students who have completed a master's degree program with a thesis component of no less than 48 credits, they may be considered for additional course registration upon the approval of their thesis advisor. These additional courses will not be counted toward the credit requirements. Additionally, they must complete a non-credit course 3 credits as follows:

| Dissertation |                          | 48 Credits |
|--------------|--------------------------|------------|
| 854681       | Dissertation 1, Type 1.1 | 6 Credits  |
| 854682       | Dissertation 2, Type 1.1 | 6 Credits  |
| 854683       | Dissertation 3, Type 1.1 | 9 Credits  |

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|---|-----------------------------------|-------|-----------|
| 854684  | Dissertation 4, Type 1.1          |       | 9 Credits |
| 854685  | Dissertation 5, Type 1.1          |       | 9 Credits |
| 854686  | Dissertation 6, Type 1.1          |       | 9 Credits |
| Required No   | n-Credit                          |       | 3 Credits |
| 854671  | Seminar 1                         |       | 1(0-2-1)  |
| 854672  | Seminar 2                         |       | 1(0-2-1)  |
| 854673  | Seminar 3                         |       | 1(0-2-1)  |
| Study P   | Plan : Plan 1.1                   |       |           |
|   | The First Year<br>First Semester  |       |           |
| 854671  | Seminar 1 (Non-credit)            |       | 1(0-2-1)  |
| 854681  | Dissertation 1, Type 1.1          |       | 6 Credits |
|   |                                   | Total | 6 Credits |
|   | The First Year<br>Second Semester |       |           |
| 854682  | Dissertation 2, Type 1.1          |       | 6 Credits |
|   |                                   | Total | 6 Credits |
|   | The Second Year<br>First Semester |       |           |
| 854672  | Seminar 2 (Non-credit)            |       | 1(0-2-1)  |
| 854683  | Dissertation 3, Type 1.1          |       | 9 Credits |

Total 9 Credits

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|        | The Second Year<br>Second Semester |       |           |
|--------|------------------------------------|-------|-----------|
| 854684 | Dissertation 4, Type 1.1           |       | 9 Credits |
|        |                                    | Total | 9 Credits |
|        |                                    |       |           |
|        | The Third Year                     |       |           |
|        | First Semester                     |       |           |
| 854673 | Seminar 3 (Non-credit)             |       | 1(0-2-1)  |
|        |                                    |       |           |
| 854685 | Dissertation 5, Type 1.1           |       | 9 Credits |
|        |                                    | Total | 9 Credits |
|        |                                    |       |           |
|        | The Third Year                     |       |           |
|        | Second Semester                    |       |           |
| 854686 | Dissertation 6, Type 1.1           |       | 9 Credits |
|        |                                    | Total | 9 Credits |

#### **Course Content/Study Topic:**

#### 854671 Seminar 1

Emphasize on encouraging students to learn how to search, criticize the articles and published papers; practice the oral presentation; discussion on selected topics of current research in smart city for research topic preparation

#### 854672 Seminar 2

Presentation and discussion of current research topics related to the smart city concerning research projects, analysis of data, and progress report presentation based on the research project

#### 854673 Seminar 3

Presentation and discussion of current research topics related to the smart city concerning summary of the research results, and progress report presentation based on the research project

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#### 1(0-2-1)

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#### 854681 Dissertation 1, Type 1.1

Studying the components of a dissertation; searching, reviewing related literature and research studies; determining the dissertation topic/title

#### 854682 Dissertation 2, Type 1.1

Developing a concept paper; preparing a review of related literature and research studies

#### 854683 Dissertation 3, Type 1.1

Developing research instruments and research methodology; preparing a dissertation proposal to be presented to the dissertation committee

#### 854684 Dissertation 4, Type 1.1

Collecting data; preparing a progress report to be presented to the dissertation advisor(s)

854685Dissertation 5, Type 1.19 CreditsAnalyzing data; preparing a draft of the dissertation

#### 854686 Dissertation 6, Type 1.1

Preparing a complete dissertation and research articles for publication according to the graduation criteria

#### 6 Credits

6 Credits

## 9 Credits

## 9 Credits

## 9 Credits

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### Requirements to Graduate in Doctoral Degree

| Requirements   | Plan<br>1.1  |
|--|--------------|
| 1. Having completed the duration of study as specified by the course                 | $\checkmark$ |
| 2. Having registered all courses as required by the course                           | $\checkmark$ |
| 3. Having passed the English proficiency test as announced by the                    |              |
| University   |              |
| 3.1. Internet Based TOEFL (TOEFL IBT) : 60   |              |
| 3.2. International English Language Testing System (IELTS) : 6.0<br>3.3. CU-TEP : 65 | $\checkmark$ |
| 3.4. Cambridge Placement Test (CEPT) : B2 (44)                                       |              |
| 3.5. Test of English for International Communication (TOEIC) : 751                   |              |
| 3.6. TEC – W Score : 89  |              |
| 4. Having passed the Qualifying Examination  | $\checkmark$ |
| 5. Having proposed the thesis and passed the oral presentation                       | $\checkmark$ |
| 6. Having published at least 2 articles from the thesis or parts of the              | $\checkmark$ |
| thesis, or the articles must at least be accepted for publication as a               |              |
| full paper in a national or international journal recognized by the                  |              |
| Commission on Higher Education Standards   |              |
| At least one article from the thesis or part of the thesis must be                   |              |
| published or at least accepted for publication or disseminated in a                  |              |
| national or international journal recognized by the Commission on                    |              |
| Higher Education Standards. One topic must be about innovation or                    |              |
| an invention that has commercial, social, and economic benefits or                   |              |
| obtain at least 1 copyright or 1 patent in accordance with the                       |              |
| university announcement.   |              |
| In the case of innovation or invention, the thesis must be                           |              |
| evaluated by at least three external experts with the necessary                      |              |
| approved by the University Council.  |              |



## School of Renewable Energy and Smart Grid Technology

Naresuan University, Phitsanulok 65000 Thailand Tel. 097-9230039 E-mail : sgtech@nu.ac.th ເວັບໄซຕ໌ www.sgtech.nu.ac.th